College Physics II — Phys 212

T Th, 11:00AM - 12:15PM — Minard Hall, Rm 116

Instructor: Dr. Kyle T. Strand
kyle.t.strand@ndsu.edu
Office Location: South Engineering 216A
Office Hours: Fri 12:00PM - 2:00PM in person or on Zoom, or contact me for appointment
Course Website: `http://triton.physics.ndsu.nodak.edu`

Course Description: Application of physics concepts and principles to the real world. Topics selected from mechanics, heat, optics, electricity, and magnetism.

Course Goals: This course is intended to give a strong basis for the fundamentals of electromagnetism in both mathematical theory and natural intuition. This course relies heavily on mathematics and explores the natural connection between the universe and the underlying mathematics as the language of physics. The course will cover topics including electric forces and fields, electric potential, electric circuits, magnetic fields and forces, magnetic induction, electromagnetic waves, and optics.

Course Format: The intent for this course is to be taught physically in the classroom. However, each course will be streamed via Zoom for remote attendance. Class meetings will be recorded and made available through LON-CAPA. A Zoom link for the course and office hours will be provided at the beginning of the course through LON-CAPA.

Prerequisite(s): Phys212

Credit Hours: 3

Recommended Text: *College Physics: Reasoning & Relationships*, 2nd Edition
Author(s): Nicholas J. Giordano; **ISBN:** 978-1-111-57102-3

Grading:

Weekly Homework	60%
Exams (5)	25%
Final Exam	15 %

88%	A
77%	B
66%	C
55%	D

Course Information:

1. **Homework:**
   - Homework assignments will be handled using LON-CAPA. Answering 90% of the problems correctly will result in full homework credit for the course. The lowest homework score will be dropped.
   - Assignments and due dates will be announced in class and posted on LON-CAPA. Any changes will be announced in class and posted on LON-CAPA.
   - Late assignments will have have a grading penalty of 20% per day.
2. **Exams:**

- No make up exams will be allowed except in cases of emergency circumstances.
- There will be 6 short exams throughout the semester.
- Each each exam will be taken on LON-CAPA.
- Each exam will contain 5 questions and graded out of 10 points.
- 4 multiple choice questions worth 1 point each.
- 1 written problem worth 6 points.
- Partial credit is available for the written problem and must be submitted to me either by email or through LON-CAPA to be eligible.
- Each exam will have a 45 minute time limit.
- The lowest exam score will be dropped.

3. **Final Exam:**

   - The final exam will consist of 10 problems similar to those seen in previous homework sets and exams.
   - 8 multiple choice questions.
   - 2 written problems.

4. **Extra Credit:**

   - I reserve the right to provide extra credit opportunities available to the entire class. These opportunities are not guaranteed and will be provided at my discretion.
   - Extra credit opportunities will only be provided to the class as a whole. No extra credit opportunities will be available for individuals.

5. **Grade Posting:**

   - Grades will be posted on Blackboard throughout the course.
   - A few weeks into the semester, I will provide a document with how to calculate your current grade at any time.
   - I reserve the right to adjust grades as I see fit, but any adjustments can only be made to the student's benefit.

6. **Weekly Review Session:**

   - I plan to do a weekly review session. I will be sending out a survey in the first two weeks to the class to find the best day and time for these sessions.

Student Responsibilities:

- Students will not be graded on attendance, but attending each class is highly encouraged. Physics courses can be quite difficult, especially if students are not present and engaged. If a class must be missed, the student is responsible for acquiring material from that session.
- The textbook for this course is not required as all materials for learning and success will be provided. However, reading the sections of the book covered in class is strongly recommended. Reading lists will be posted on LON-CAPA.

  - For a digital copy of the textbook and materials, see inclusive access information on Blackboard.

- In class participation is strongly encouraged. Quality discussion can be very beneficial.
- We will attempt to solve problems and engage in many small group discussions. We will use these small group activities to drive the full class discussions as much as time permits.
- Coming to office hours are a great way to get extra help. If you are unable to make it to office hours, we can attempt to arrange special appointments to meet. You can also send questions via email and I will do my best to give a prompt response.
- Note that Friday office hours will be on Zoom, but feel free to come in person if that suits your learning style better.
- I have an open door policy in regards to office hours. If you come to my office outside of scheduled office hours and my door is open, feel free to come in and help will be available!
- Studying in groups are also an excellent way to learn in a physics course. I encourage you to arrange study groups to work together outside of class.
- Most of all, work hard and have fun! This course can be very enjoyable and I will do my best to make sure we can maximize the enjoyment. If you have any concerns, let me know. I welcome all feedback to help make the course better. It is my job to help you to learn the course materials to the best of your ability, so use me as a resource!

LON-CAPA:

The LON-CAPA course management system will be used to post homework, lecture notes, grades, and other information. LON-CAPA can be accessed by selecting the appropriate server at **http://www.ndsu.edu/physics/lon_capa/**. Your username is everything to the left of the @ in your NDSU email address (use all lowercase letters). For example, if your email address is Sheldon.Cooper.2@ndsu.edu, then your LON-CAPA username is sheldon.cooper.2. Initially you create your own password by following the link "Forgot Password". (Use your NDSU email address *without the "my"* here.) For help using LON-CAPA contact your instructor or laboratory technician Paul Omernik (SE110, Paul.Omernik@ndsu.edu, 231-7047)

IF YOU DIDN'T RECEIVE THE 'RESET YOUR PASSWORD' EMAIL, MAKE SURE YOU CHECK YOUR JUNK FOLDERS.

Tentative Course Outline:

Chapter	Content
Chapter 17:	Electric Forces and Fields
Chapter 18:	Electric Potential
Chapter 19:	Electric Currents and Circuits
Chapter 20:	Magnetic Fields and Forces
Chapter 21:	Magnetic Induction
Chapter 22:	Alternating Current and Machines
Chapter 23:	Electromagnetic Waves
Chapter 24:	Geometric Waves
Chapter 25:	Wave Optics
Chapter 26:	Applications of Optics

Tentative Exam Dates
Exam #1: Thursday, September 8
Exam #2: Thursday, September 22
Exam #3: Thursday, October 6
Exam #4: Thursday, October 20
Exam #5: Thursday, November 10
Exam #6: Thursday, December 1
Final Exam: Wednesday, Dec 14, 8:00AM (**Exam will be asynchronous**)

Illness:

Do not come to class if you are sick or if you have been exposed to individuals who have tested positive for COVID-19 and/or you have been notified to self-quarantine due to exposure. Please protect your health and the health of others by staying home and participate in class remotely. For further information on COVID-19 symptoms, testing, and steps to stay healthy, see `https://www.ndsu.edu/studenthealthservice/covid_19`. If you are unable to attend class at the regularly scheduled time due to illness, contact instructor for alternate arrangements, especially for exams and homework due dates.

Student Resources:

There are many resources available to you as a student to help when needed. There's no shame and reaching out when you are in need of help. There are many other great resources available which can be very helpful in times of need:

- NDSU Counseling Services: 701-231-7671, `https://www.ndsu.edu/counseling`
- NDSU Disability Services: 701-231-8463, `https://www.ndsu.edu/disabilityservices`
- Student Health Service: 701-231-7331, `https://www.ndsu.edu/studenthealthservice`
- Dean of Students Office: 701-231-7701, `https://www.ndsu.edu/deanofstudents`
- National Suicide Prevention Lifeline: 988, `https://www.suicidepreventionlifeline.org`

Additional Information:

-The academic community is operated on the basis of honesty, integrity, and fair play. NDSU Policy 335: Code of Academic Responsibility and Conduct applies to cases in which cheating, plagiarism, or other academic misconduct have occurred in an instructional context. Students found guilty of academic misconduct are subject to penalties, up to and possibly including suspension and/or expulsion. Student academic misconduct records are maintained by the Office of Registration and Records. Informational resources about academic honesty for students and instructional staff members can be found at

`www.ndsu.edu/academichonesty.`

-All access to NDSU computers must respect NDSU Senate Policy,s ection 158: Acceptable use of Electronic Communication Devices

`www.ndsu.nodak.edu/policy/158.htm`

-Any students with disabilities or other special needs, who need special accommodations in this course are invited to share concerns or requests with the instructor and to contact the Disability Services Office as soon as possible.